

CLAIMS

What is claimed is:

1. A high availability voice over internet protocol system coupled to a public switched telephone network, comprising:
 - a. a plurality of gateways configured to receive at least one voice call from the public switched telephone network, wherein the plurality of gateways are coupled to at least one hub;
 - b. a proxy table configured in each of the plurality of gateways, wherein the plurality of gateways send the at least one voice call to one of at least one proxy server; and
 - c. a call restoration data table configured in each of the plurality of gateways, wherein the call restoration data table provides data to restore a lost call.
2. The system as claimed in claim 1 wherein the at least one hub coupled to the plurality of gateways is configured to receive the at least one voice call from the plurality of gateways, further wherein the at least one voice call is divided by the plurality of gateways into a session initiation protocol portion and a real time protocol portion.
3. The system as claimed in claim 2 wherein the at least one hub includes the at least one proxy server, the at least one proxy server configured to receive the session initiation protocol portion of the at least one voice call.
4. The system as claimed in claim 2 further comprising at least one media server configured in the at least one hub, the at least one media server configured to receive the real time protocol portion for the at least one voice call.
5. The system as claimed in claim 1 wherein the at least one hub includes an application server coupled by an interface logic device to communicate with the at least one proxy server and the media server.

- 1 6. The system as claimed in claim 1 further comprising at least one node coupled to each of
2 the at least one hub with a wide area network connection, wherein the at least one node
3 includes a single proxy server and a single media server.
- 1 7. The system as claimed in claim 6 wherein the at least one node is coupled to each of the
2 at least one hub with a local area network connection, wherein the at least one node
3 includes the single proxy server and the single media server.
- 1 8. The system as claimed in claim 1 wherein the plurality of gateways are configured such
2 that when one of the plurality of gateways fails, the remainder of the plurality of
3 gateways remain operational.
- 1 9. The system as claimed in claim 1 further comprising a load balancing switch for directing
2 any of the at least one voice calls to the plurality of gateways.
- 1 10. The system as claimed in claim 1 wherein the proxy table selects the appropriate one of
2 the at least one proxy server based on a priority scheme.
- 1 11. The system as claimed in claim 1 wherein the data provided to the call restoration data
2 table is transmitted to the call restoration data table in a session initiation protocol packet,
3 further wherein the session initiation protocol packet includes a header and an SDP body.
- 1 12. The system as claimed in claim 11 wherein the data provided to the call restoration data
2 table is stored as a key value pair, further wherein the key value pair is derived from the
3 header and the SDP body.
- 1 13. A method of providing a high availability voice over internet protocol system,
2 comprising:
3 a. configuring a plurality of gateways between a public switched telephone network
4 and at least one hub;
5 b. implementing a proxy table and a call restoration data table in each of the plurality
6 of gateways;

- c. receiving in the plurality of gateways at least one voice call from the public switched telephone network;
- d. dividing the at least one voice call into a session initiation protocol portion and a real time protocol portion;
- e. sending the session initiation protocol portion of the at least one voice call to one of at least one proxy server, the at least one proxy server being located in the at least one hub, according to the proxy table; and
- f. sending the real time protocol portion of the at least one voice call to a media server, the media server configured in the at least one hub.

14. The method as claimed in claim 13 further comprising restoring a lost call with data provided to the call restoration data table.

15. The method as claimed in claim 13 wherein the at least one hub includes an application server coupled by an interface logic device to communicate with the at least one proxy server and the media server.

16. The method as claimed in claim 13 wherein at least one node is coupled to each of the at least one hub with a wide area network connection, further wherein the at least one node includes a single proxy server and a single media server.

17. The method as claimed in claim 16 wherein the at least one node is coupled to each of the at least one hub with a local area network connection, further wherein the at least one node includes the single proxy server and the single media server.

18. The method as claimed in claim 13 wherein the plurality of gateways are configured such that when one of the plurality of gateways fails, the remainder of the plurality of gateways remain operational.

19. The method as claimed in claim 13 further comprising directing any of the at least one voice calls to the plurality of gateways with a load balancing switch.

1 20. The method as claimed in claim 13 wherein the proxy table selects the appropriate one of
2 the at least one proxy server based on a priority scheme.

1 21. The method as claimed in claim 13 wherein the data provided to the call restoration data
2 table is transmitted to the call restoration data table in a session initiation protocol packet,
3 further wherein the session initiation protocol packet includes a header and an SDP body.

1 22. The method as claimed in claim 21 wherein the data provided to the call restoration data
2 table is stored as a key value pair, further wherein the key value pair is derived from the
3 header and the SDP body.

1 23. A high availability voice over internet protocol system coupled to a public switched
2 telephone network, comprising:
3 a. means for configuring a plurality of gateways between a public switched
4 telephone network and at least one hub;
5 b. means for implementing a proxy table and a call restoration data table in each of
6 the plurality of gateways;
7 c. means for receiving in the plurality of gateways at least one voice call from the
8 public switched telephone network;
9 d. means for dividing the at least one voice call into a session initiation protocol
10 portion and a real time protocol portion;
11 e. means for sending the session initiation protocol portion of the at least one voice
12 call to one of at least one proxy server, the at least one proxy server being located
13 in the at least one hub, according to the proxy table; and
14 f. means for sending the real time protocol portion of the at least one voice call to a
15 media server, the media server configured in the at least one hub.

1 24. The system as claimed in claim 23 further comprising means for restoring a lost call with
2 data provided to the call restoration data table.

1 25. The system as claimed in claim 23 wherein the at least one hub includes an application
2 server coupled by an interface logic device to communicate with the at least one proxy
3 server and the media server.

- 1 26. The system as claimed in claim 23 wherein at least one node is coupled to each of the at
2 least one hub with a wide area network connection, further wherein the at least one node
3 includes a single proxy server and a single media server.
- 1 27. The system as claimed in claim 26 wherein the at least one node is coupled to each of the
2 at least one hub with a local area network connection, further wherein the at least one
3 node includes the single proxy server and the single media server.
- 1 28. The system as claimed in claim 23 wherein the plurality of gateways are configured such
2 that when one of the plurality of gateways fails, the remainder of the plurality of
3 gateways remain operational.
- 1 29. The system as claimed in claim 23 further comprising means for directing any of the at
2 least one voice calls to the plurality of gateways with a load balancing switch.
- 1 30. The system as claimed in claim 23 wherein the proxy table selects the appropriate one of
2 the at least one proxy server based on a priority scheme.
- 1 31. The system as claimed in claim 23 wherein the data provided to the call restoration data
2 table is transmitted to the call restoration data table in a session initiation protocol packet,
3 further wherein the session initiation protocol packet includes a header and an SDP body.
- 1 32. The system as claimed in claim 31 wherein the data provided to the call restoration data
2 table is stored as a key value pair, further wherein the key value pair is derived from the
3 header and the SDP body.
- 1 33. A method of routing session initiation protocol voice calls through a plurality of gateways
2 using a proxy server priority table having a proxy address for each incoming call,
3 comprising:
4 a. setting the proxy server priority table to a first level;
5 b. contacting a designated proxy when a pointer value is assigned to the proxy
6 address, the pointer value corresponding to the designated proxy;

- c. contacting a first proxy in the first level;
- d. attaching the proxy address through the first proxy in the first level when the first proxy in the first level responds before a first time out value;
- e. contacting a second proxy in the first level if the first proxy in the first level does not respond before the first time out value; and
- f. setting the proxy server priority table to a second level when the second proxy does not exist in the first level.

34. The method as claimed in claim 33 further comprising attaching the proxy address having the pointer value to the designated proxy when the designated proxy responds before a second time out value.

35. The method as claimed in claim 34 further comprising incrementing the pointer value to the next proxy address in the first level.

36. The method as claimed in claim 33 further comprising incrementing the pointer value to an incremented pointer value when the designated proxy does not respond before the second time out value, wherein the incremented pointer value corresponds to an incremented designated proxy.

37. The method as claimed in claim 36 further comprising contacting the incremented designated proxy, the incremented pointer value corresponding to the incremented designated proxy.